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TWO NEW LAND SHELLS OF THE GENUS BULIMULUS FROM BOLIVIA

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TWO NEW LAND SHELLS OF THE GENUS BULIMULUS FROM BOLIVIA

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Six specimens of land shells from Tamañani, on the Upper Ayapayo River, 85 miles northeast of Oruro, Bolivia, collected in 1930 and presented to the National Museum by Frank L. Hess, of the United States Geological Survey, included the two new species which are described in this paper.

BULIMULUS (SCUTALUS) HESSI, new species

Plate 1, Figures 1, 2, 5, 6

Shell large, stout, rather thick. Spire conoidal, whorls 7, slightly convex, rapidly increasing. Apical whorls finely reticulated with innumerable fine lines. Suture well marked, the summit of each whorl margined by white, strong crenulations. Sculpture of many coarse, slightly retractive growth riblets, the early whorls showing many fine spiral incised lines; on the later whorls the spirals are nearly obsolete, showing only here and there in the spaces between the growth riblets. Body whorl very large. Apex white, next two whorls flesh color, third whorl pale chestnut, next whorl chestnut, body whorl nearly chocolate color, with a faint narrow darker spiral line circling the periphery. Many of the growth riblets whitish. Umbilicus large, but in a front view of the shell concealed by the wide reflection of the columella. Aperture subquadrate, a trifle elongate, its outer lip somewhat thickened and slightly reflected, basal lip more reflected, the columella nearly perpendicular and widely reflected over the open umbilicus. Parietal wall with a thick callus. Edge of peritreme and the parietal callus cream color, a broad band of white just within. Interior livid violaceous.

Type.—The type (U.S.N.M. No. 382217) measures: Length, 56 mm; greatest diameter, 28 mm; height of aperture, 27 mm. It and four paratypes (U.S.N.M. No. 382218) were received from F. L. Hess, for whom the species is named.

Remarks.—Three of the paratypes are almost exactly like the type; the fourth is slenderer, its columella somewhat oblique and twisted. The species is closely related to *Bulimulus* (*Scutalus*) *pluto* Crosse, but is larger, darker, more inflated, its columella nearly perpendicular, much wider, and with no external evidence of a twist. Crosse said, "the two embryonic whorls smooth and polished, whitish." Probably they were worn smooth, but if perfect would be like those of *hessi*. This species and *B.* (*S.*) *pluto* form a natural group quite different from the group of *B.* (*S.*) *tupacii*, and yet, although lacking any indications of granules, evidently related through that species to the subgenus *Scutalus*.

BULIMULUS (SCUTALUS) BOLIVIANUS, new species

PLATE 1, FIGURES 3, 4

Shell slender, very elongate, of rather thin texture, early whorls rapidly increasing in diameter, making the upper end of the spire low conical; middle portion increasing slowly, making that part subcylindrical; body whorl becoming somewhat inflated as it approaches the aperture, making it stand out obliquely from the general contour of the whorls immediately above. Whorls 7, sutures boldly marked, the top of each whorl strongly crenulated. The penultimate whorl after making its first half turn falls below the periphery, giving a distorted appearance, especially to the rear view. Approaching the aperture the body whorl mounts until the suture is at the periphery. (The dropping and mounting of the whorl may be abnormal.) Sculpture consisting of the strong crenulations along the suture, many well-marked, slightly protractive growth riblets, and very faint incised spiral lines. Nuclear whorls worn, but bearing traces of numerous wavy, very fine vertical striae. Color white, with many well-marked spiral bands and some maculations of light chestnut. Aperture oblique, occupying about two-fifths the length of the shell. Peristome slightly thickened within, and a little reflected. Columella nearly straight and vertical, widely reflected, standing separated from the prominent umbilicus but concealing it when viewed from the front. Edge of peristome tinged with yellowish; interior of shell white, the colors of the exterior showing through as bands and spots.

Type.—The type (and only specimen, U.S.N.M. No. 382216) measures: Length, 61 mm; greatest diameter, 27 mm; height of aperture, 27 mm.

Remarks.—So far as known, this is the longest and one of the slenderest *Scutalus*. There seems little doubt that it is properly placed in the subgenus *Scutalus*. The sculpture of its apical whorls, the

white crenulations along the suture, and the oblique aperture all indicate that it is properly allocated to that subgenus, and the upper whorls all show that the young shell was very similar to the young of several other species of the subgenus, especially *Bulimulus* (*Scutalus*) *alauda* Hupé and *B.* (*S.*) *thamnoicus marmorata* d' Orbigny, which surely is a synonym of *B.* (*S.*) *alauda.* It seems possible that the shells described by Hupé and d' Orbigny are immature, and if fully developed would be *B.* (*S.*)*bolivianus.* The thin outer lip indicates young shells, but the reflection of the columella shows that the adult stage is nearly reached. Unlike most species of the subgenus *Scutalus*, this new species shows no traces of granulation, and this serves to distinguish it sharply from *B.* (*S.*) *angrandi* Morelet, which it mimics in form and color.

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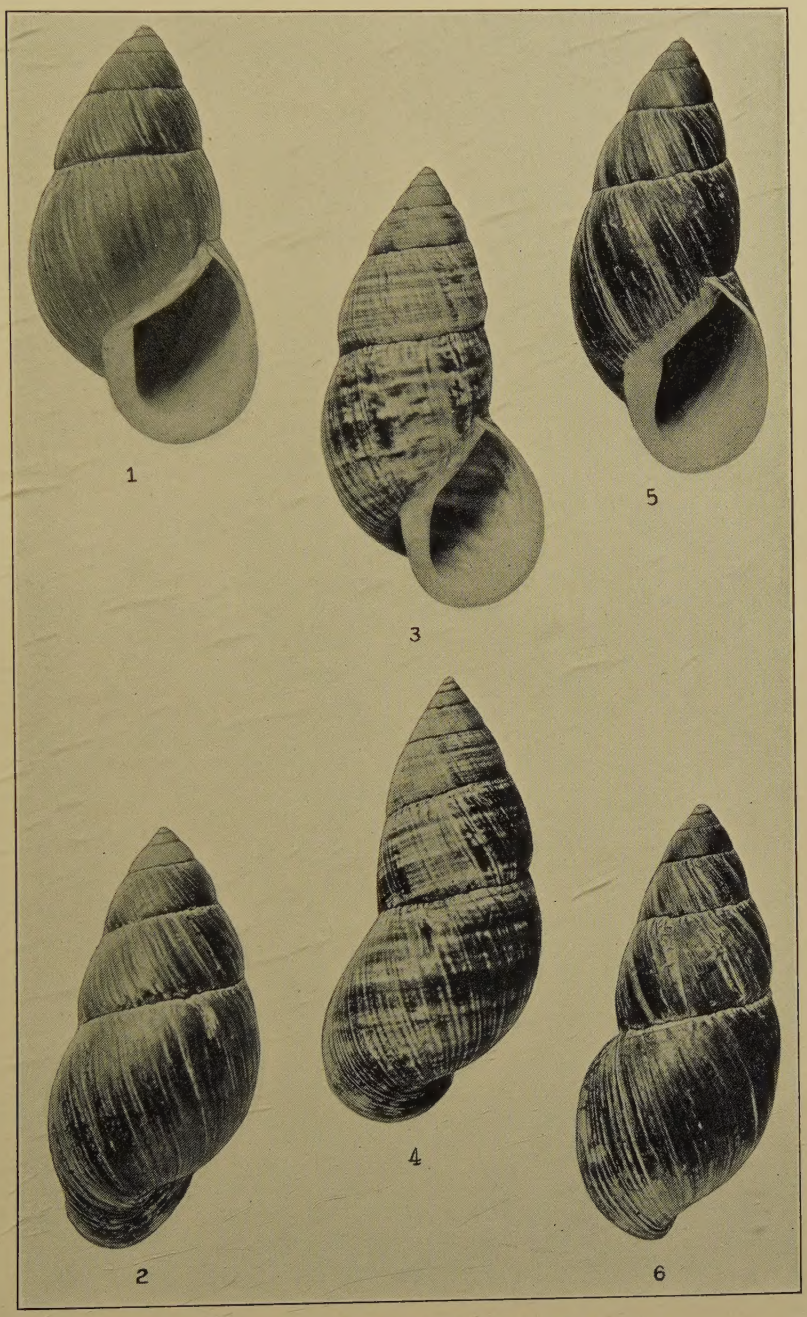

NEW SPECIES OF BULIMULUS FROM BOLIVIA

1, 2, *Bulimulus* (*Scutalus*) *hessi*, type; 3, 4, *B.* (*S.*) *bolivianus*, type; 5, 6, *B.* (*S.*) *hessi*, paratype.